

DATURA LANOSA, A NEW SPECIES OF DATURA FROM MEXICO

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ABSTRACT.--*Datura lanosa* Barclay *ex* Bye, related to *D. inoxia* and *D. wrightii*, is described from northwest Mexico.

Based upon ethnobotanical and floristic studies in the Sierra Madre Occidental of Chihuahua, Mexico, and biosystematic studies of North American species of *Datura*, a new species is proposed:

Datura lanosa Barclay *ex* Bye, sp. nov. -- *Datura wrightii* Regel affinis, a qua differt foliis supra puberulis, subtus lanato-pubescentibus, marginibus irregulariter sinuato-dentatis, petiolis et ramis junioribus et pedunculis floralibus et fructibus et calycibus extus lanatis. Typus: MEXICO. Sinaloa. Culiacán and vicinity; volcanic cerro and valley, thorn forest, marginal river sand, 150-500 ft. alt., Aug., 1944, H. S. Gentry 7052 (Holotype, GH!; isotypes, FI, NY!, UC!, US).

Cauliscent dichotomously branched perennial herb up to 1.5 m or more in height, widely spreading, the young branches lanate, the entire plant appearing canescent. Leaves simple, alternate, ovate, margin entire or irregularly sinuate-dentate, the apex acute, the base equal to subequal, petioles up to 10 cm long; leaf blades up to 21.5 cm long and 18 cm wide, one-half to two-thirds as broad as long; upper surface puberulent, lower surface lanate, the same pubescence continuing along the petiole. Flowers pedicellate, erect, borne in the axils of the branches; pedicels lanate, erect during anthesis, later becoming somewhat elongate and recurved; calyx tube cylindrical, 8-15 cm long, 5-toothed at the apex, the exterior lanulose, the interior glabrous; calyx teeth acuminate, 1.5-3.0 cm long, 0.7-1.2 cm broad at the base; corolla white, funnelform, plicate, terminating in a 5-dentate border, 14.5-20.0 cm long, the corolla teeth (acumina) acute to acuminate, 0.6-2.0 cm long and 0.3-0.5 cm wide at the base, each with 3 conspicuous proximal nerves; margin of the corolla between the teeth rounded or with interacuminal lobules giving the corolla the appearance of being 10-angled; exterior of the corolla glabrous to slightly puberulent along the veins, interior glabrous down to the point of staminal adnation, becoming sparsely pubescent below; stamens 5, free, epipetalous, extending 12-17 cm from the base of the corolla and adnate to the tube for about half

their length, anthers 1.2-1.6 cm long with filamentous trichomes along the lines of dehiscence; style 11.7-17.7 cm long; stigma bilobed. Fruits subglobose, irregularly dehiscent; capsules up to 4 cm long, recurved on pedicels 2.0-3.5 cm long; pericarp covered with short, sharp spines approximately 5 mm long; surface of both the fruit and the spines villous to lanate; calyx persistent, circumscissile above the base, forming an appressed cup-like structure which subtends the capsule. Seeds reniform, carunculate, 4.0-5.2 mm long, 3.0-4.0 mm wide, with three ridges which form a cord-like band on the convex edge of the seed, the lateral faces smooth.

Originally, this taxon was recognized as a subspecies of *D. innoxia* Miller by Arthur Barclay (1959) but was not published effectively.

Datura lanosa is closely related to *D. innoxia* and *D. wrightii*, based upon similarities of morphological characters and karyotypes. The branches, leaves, flowers, fruits and seeds are more similar to these species than to other members of the section Dutra Bernh. The principal difference is the type of pubescence (see key below). The karyotypes of *D. lanosa*, *D. innoxia* and *D. wrightii* are similar in that three chromosome pairs have satellites; they differ from *D. discolor*, another member of section Dutra, and *D. stramonium* (of the section Datura) in having only four chromosome pairs with satellites (Palomino *et al.*, in press). One of the three pairs of *D. lanosa* have satellites at both ends of the chromosome while all three pairs of *D. innoxia* and *D. wrightii* have satellites on only one end.

Datura lanosa grows in open, disturbed sites near arroyos and drainage depressions of the thorn forest and tropical deciduous forest of northwest Mexico. It is found from sea level on the coastal plain to 1,000 m snm in the barrancas on the western slope of the Sierra Madre Occidental.

Throughout its range it is called 'toloache', a vernacular name applied to many species of *Datura* and derived from the Nahuatl terms 'toloa' and 'toloatzin'. A poultice prepared by mixing the crushed leaves with animal fat is used to treat various pains, skin inflammations and sores. The people also attribute poisonous properties to all parts of the plant if it is smelled, handled or ingested. In large doses, it may cause permanent insanity or death. The Tarahumara Indians of Chihuahua call the plant 'rikürí' and consider it one of the allies of the devil; hence it is dangerous to harm the plant. The Pima Indians of Sonora call it 'hákundum' ("it does something to our head").

SPECIMENS EXAMINED: MEXICO. Chihuahua. Batopilas, Aug.-Nov. 1885, E. Palmer Z-1 (F, US); La Bufa, R. Bye 2977, 9612 (COLO), Bye & Weber 8349 (COLO), Bye *et al.* 12850, 12853 (COLO), Bye & Linares 14246-8, 14250-2 (MEXU); Moris, June 1968, C. W. Pennington 6, 7 (TEX); Southern Chihuahua, R. M. Zingg A 73 (F). Nayarit. Acaponeta, 30 July 1897, J. N. Rose s.n. (US); El Recodo, Bye & Arellano 13316 (MEXU); Jesús María, El Nayar, Colunga & Zizumbo 13 (CAS, MEXU, UC). Sinaloa. Bella Vista, Mazatlán, J. Gonzalez Ortega 6373 (DS, GH); Bomoa, Bye & Arellano 13355 (MEXU); Celaya, Escuinapa, Bye & Arellano 13363; Culiacán, Gentry 7052 (F, GH, NY, UC), Rose *et al.* 14918 (NY, US); ca. 66 km N of Culiacán, Bye & Arellano 13334 (MEXU); El

Fuerte, *Gentry 4920* (ARIZ, MO), *Rose et al. 13452* (US); Guamuchil, *Hansen & Nee 1400* (MEXU, US); Gusave, *Bye & Arellano 13351* (MEXU); La Constancia, El Fuerte, *Gonzalez O. 5483* (MEXU, US); Las Cabras, Escuinapa, *Bye & Arellano 13366* (MEXU); Las Palmas, *Gonzalez O. 4544* (US); Marismas, Escuinapa, *Gonzalez O. s.n.* (MEXU); Mazatlán, *Gonzalez O. 5654* (US); San Blas, *Rose et al. 13355* (US, NY), *M. E. Jones 23115 p.p.* (POM); Villa Union, *Rose et al. 13927* (NY, US), *Bye & Arellano 13323-4* (MEXU). **Sonora.** Alamos, *Rose et al. 13010* (NY, US), *C. E. Smith CS 4703* (US), *Bye & Arellano 13346-7* (MEXU); Onavas, *A. M. Rea 44* (SD); San Bernardo, *Gentry 1346* (ARIZ, F, GH, MEXU, MO, UC, US).

Key to *Datura lanosa* and related species

- A. Lower leaf surface softly pilose, particularly along the veins, the same indument extending to the petiole; venation of the leaves tending to be strongly pinnate with the veinlets inconspicuous; exterior of corolla usually glabrous. *D. innoxia*
- AA. Lower leaf surface not as above; venation of leaves pinnate but veinlets more pronounced, giving a more reticulate pattern to the lower leaf surface; exterior of corolla puberulent, especially along the veins. (B)
- B. Lower leaf surface and petioles canescent, densely covered with short trichomes. *D. wrightii*
- BB. Lower leaf surface, petioles and young branches lanate. *D. lanosa*

Bibliography

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